

Work Order ID 138077

October 23, 2015 10:53:47 AM

647.1601
B138077
REV. A

138077

Page 1

Item ID: 647.1601

Revision ID:

Item Name: Wiper Deflector Aft

Start Date: 10/23/2015 Start Qty: 2.00

Required Date: 11/19/2015 Req'd Qty: 2.00

Reference:

Accept

N900040100

Setup Start

NS1

Stop

NS2

Cust Item ID:

Customer:

20151023

Approvals:

Process Plan: *SA*

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
647.1600	A

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

SA
DAS
27
9-89

OCT 26 2015

120

0.00

120

Small Fab

Memo

0.00

Small Fab

1- Assemble as per dwg

SA

DAS
36
9-89
15/10/26

130

QC5- Inspect part completeness to step on W/O

0.00

130

QC

Memo

0.00

Quality Control

(2)

DAS
38
9-89

OCT 27 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval				
Description Work Order Deviation				Disposition							
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due		☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter		FAULT CATEGORY ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes		☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center		☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence	
				☐ OTHER : _____							

Work Order ID 138077

October 23, 2015 10:53:47 AM

138077

Page 2

Item ID: 647.1601 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Wiper Deflector Aft
Start Date: 10/23/2015 Start Qty: 2.00 ***2*** Cust Item ID:
Required Date: 11/19/2015 Req'd Qty: 2.00 ***2*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Identify as per dwg & Stock Location: <u>SCK 091</u>	0.00							
140									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
									OCT 28 2014
									DAS 6 9-89
150	QC21- Final Inspection - Work Order Release	0.00							
150									
QC	Memo	0.00							
Quality Control									

15/10/28

51028

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval				
Description Work Order Deviation				Disposition							
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter		☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes		☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center		☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence	
				OTHER :							

Picklist Print

October 23, 2015 10:54:24 AM

Page 1

Work Order ID: 138077

138077

Parent Item: 647.1601

647 1601

Parent Item Name: Wiper Deflector Aft

Start Date: 10/23/2015

Required Date: 11/19/2015

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A 12.10.04 NEW ISSUE DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
647.1611		Manufactured	No				Each	4.0000	1	2			

647 1611

Wiper Deflector, Aft

DAS

27

9-89

Location

Loc Qty

Loc Code

MF

4

114794

4

647.1612

Manufactured

No

Each

16.0000

2

4

647 1612

Splice Plate

DAS

27

9-89

Location

Loc Qty

Loc Code

CCK107

16

92068

16

NAS1149FN832P

Purchased

No

Each

2,232.000

6

12

NAS1149FN832P

Washer

DAS

27

9-89

Location

Loc Qty

Loc Code

GA

346

125268

346

ST260a

500

M133316

500

ST267

465

125268

100

M133284

365

st268

921

M130388

921

OCT 26 2015

Picklist Print

October 23, 2015 10:54:24 AM

Page 2

Work Order ID: 138077

138077

Parent Item: 647.1601

647 1601

Parent Item Name: Wiper Deflector Aft

Start Date: 10/23/2015

Required Date: 11/19/2015

Start Qty: 2.00

Required Qty: 2.00

MS21042-08

MS21042L08

Purchased

No

Each

33.0000

3 6

MS21042-08

USE MS21042L08

Location

Loc Qty

Loc Code

DAS

27

9-89

ST304

25

122815

25

ST306

8

m130388

8

Each

156.0000

3 6

MS27039-08-12

Purchased

No

MS27039-08-12

Screw

OCT 26 2015

Location

Loc Qty

Loc Code

DAS

27

9-89

ST273A

47

123352

47

ST273B

100

124326

100

ST281

9

123900

2

1850

7

APICAL

INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO.

04229

SHEET 1 OF 1

DWG NO. 647.1600

REV: A

PREPARED BY J. SOTO

DATE: 11/11/2013

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: WIPER DEFLECTOR ASSY

APPROVED BY:

ENGR *[Signature]*

MFG

[Signature]

QC

[Signature]

EFF. NEXT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON: REVISED F/N 8

ECR: 13-032

20151023 *SH 138077*

8	R	601.2207	8		NUTPLATE RIVET	CCR265SS3-3	
F/N	TC	PART NUMBER	.1602	.1601	DESCRIPTION	MATERIAL	SPECIFICATION
			QTY				

DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☒ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO

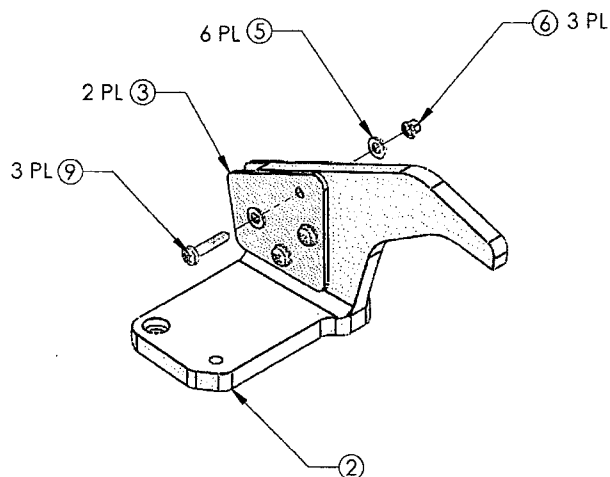
1 2 3 4 5 6 7 8

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

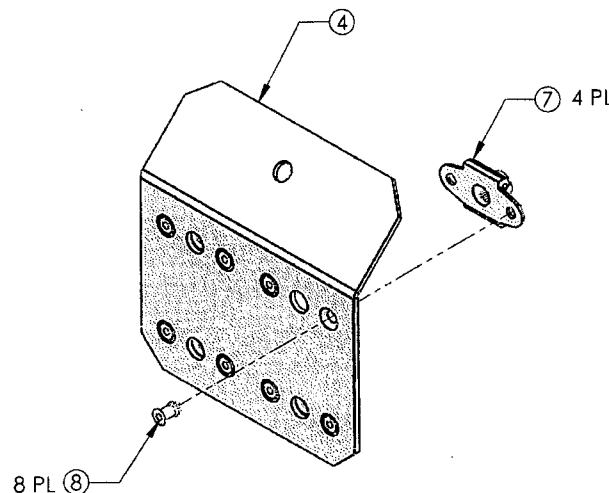
NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 AMS-QQ-A-250/12
- 2 MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4
- 3 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
- 4 DEBURR AND BREAK ALL SHARP EDGES
- 5 IDENTIFY IAW MPP-120

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	LAST PROTOTYPE REVISION- PRI		P/C
H/C	INITIAL RELEASE	03/10/09	P. BRAVO
A	INCORPORATED ECN 0429	08/29/13	P. BRAVO



647.1601 SHOWN EXPLODED



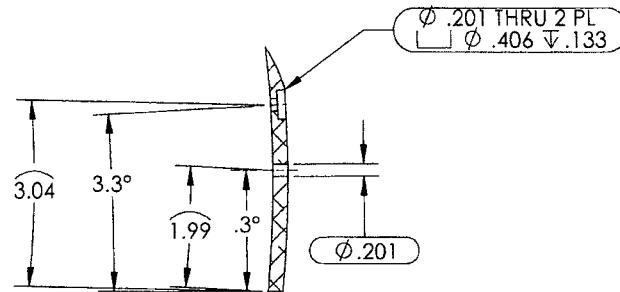
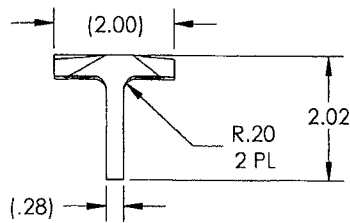
647.1602 SHOWN EXPLODED

UNINCORPORATED ECN(s)

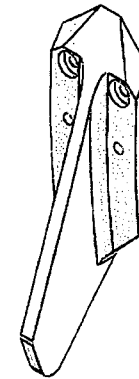
04229

	3	9	601.2989	SCREW	MS27039-0812	
8	8	601.2980	NUTPLATE RIVET	CCR26455-3-04		
4	7	601.1900	NUTPLATE	MS21059-3		
	3	6	601.2973	LOCKNUT	MS21042-03	
	6	5	601.2764	WASHER	NAS1149FN832P	
1	4	647.1613	DOUBLER		2	3
	2	3	647.1612	SPICE PLATE	2	3
	1	2	647.1611	WIPER DEFLECTOR, AFI	1	3
		1	647.1610	WIPER DEFLECTOR, FWD	1	3
	X		647.1602	DOUBLER ASSY		
	X		647.1601	WIPER DEFLECTOR ASSY, AFI		
1602	1601	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.
QTY			PARTS LIST			
NEXT ASSY (S)			APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300 WIPER DEFLECTOR ASSY			
647.1300						
			ORIGINAL DATE (MM-DD-YY) 08-10-09 DRAWN BY J. GARDNER CHECKED P. BRAVO DRAWING APPROVAL 08-10-09 CONTRACT NO.			
			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.003 ANGLES ±.5°			
			SIZE B	CAGE CODE 07M26	DWG. NO. 647.1600	REV A
			SCALE NONE		SHEET 1 OF 6	

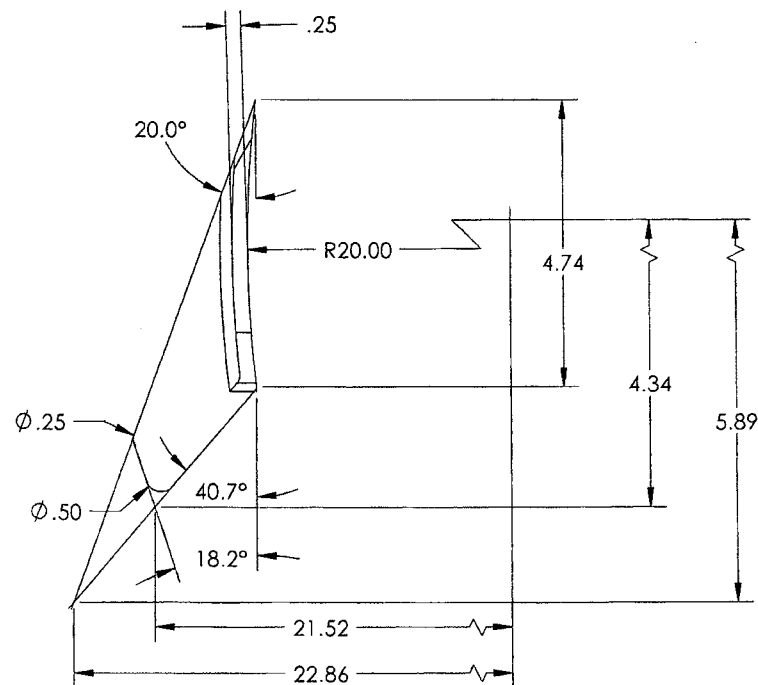
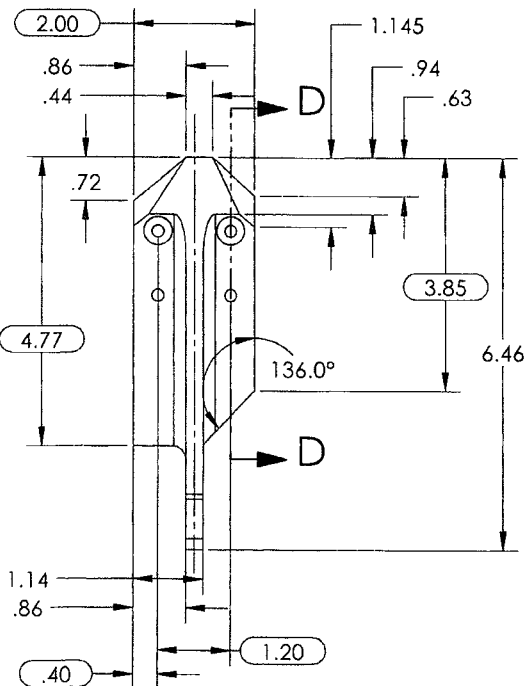
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



SECTION D-D



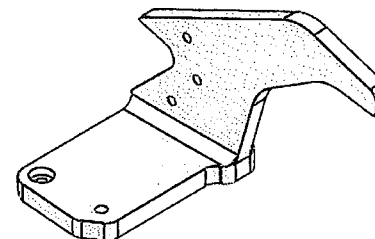
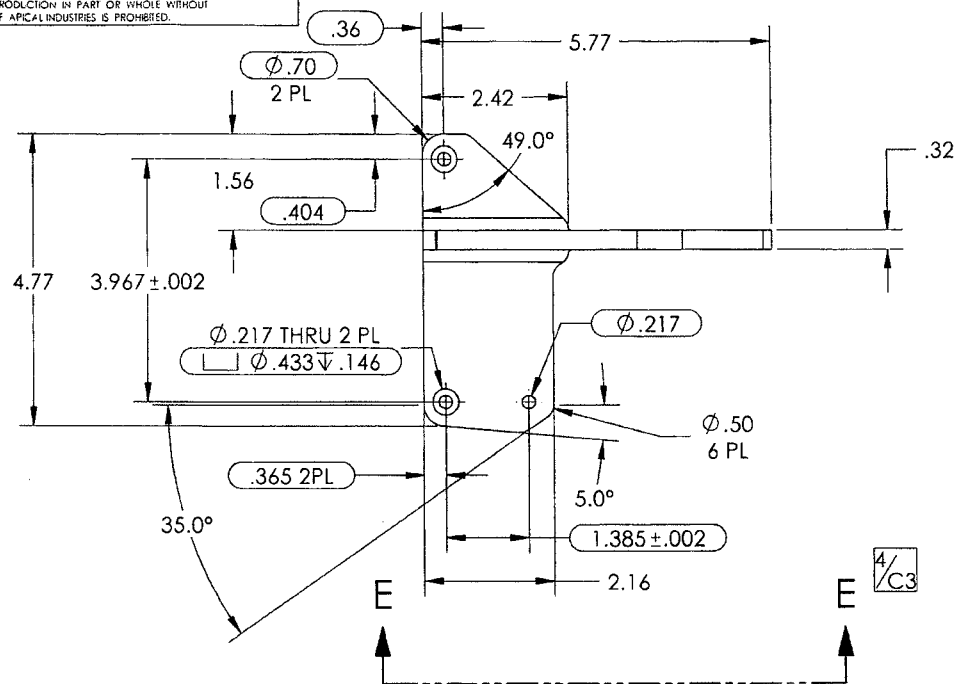
647.1610



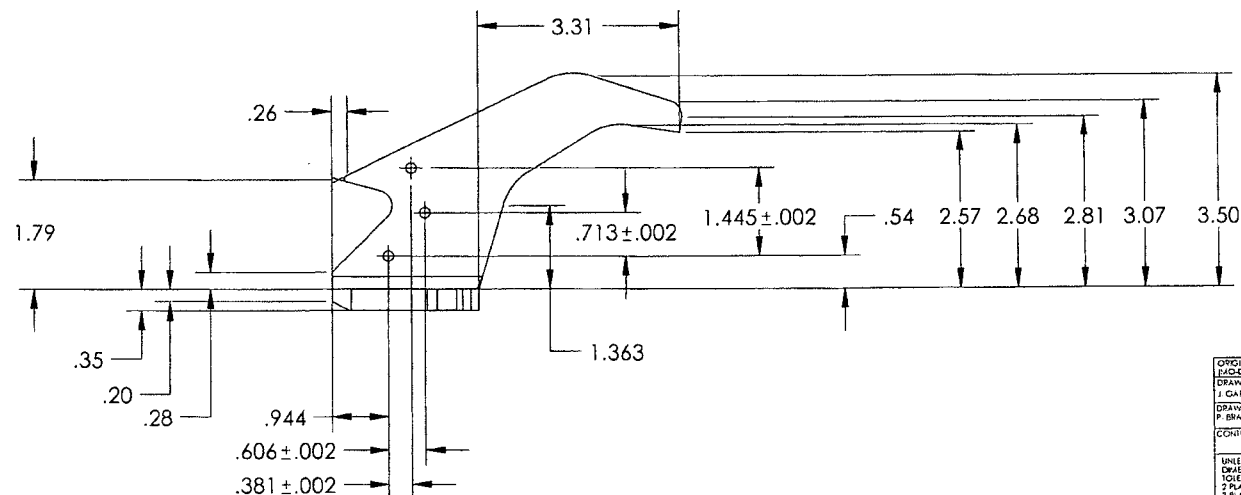
ORIGINAL DATE MODIFIED DATE		DESIGNED BY CHECKED BY	
DRAWN BY J. GARDNER		P. BRAYD	
DRAWING APPROVAL P. BRAYD			
CONTRACT NO.		APICAL INDUSTRIES 2608 PETERS HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		WIPER DEFLECTOR ASSY	
SHEET B	CAGE CODE 07M26	DWG. NO. 647.1600	REV A
SCALE: NONE		SHEET 2 OF 6	

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760) 724-5300
WIPER DEFLECTOR ASSY

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

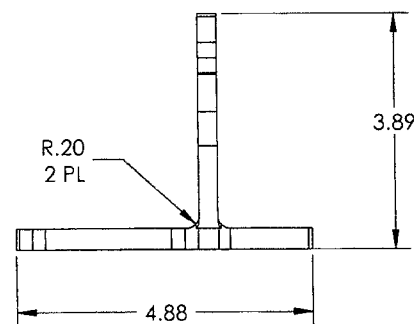
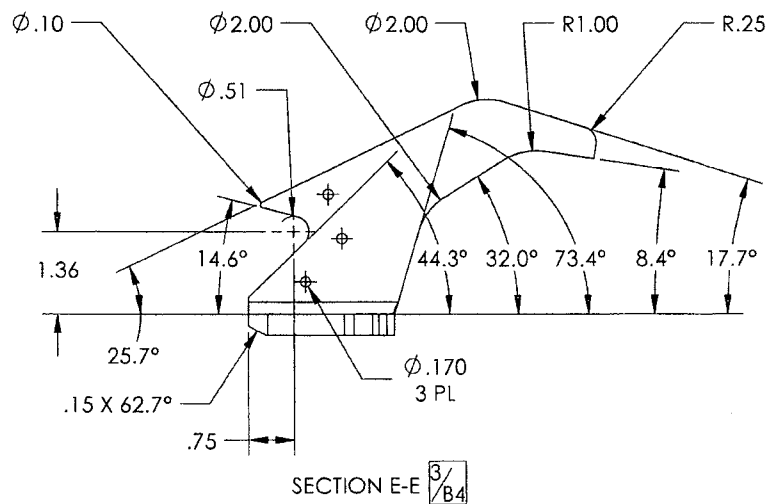


647.1611



ORIGINAL DATE (JULY 1971)		APICAL INDUSTRIES	
DRAWN BY J. CARDNER		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		WIPER DEFLECTOR ASSY	
CONTRACT NO.		SHEET B	REV A
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± 5°		DWG. NO. 647.1600	SCALE: NONE
		SHEET 3 OF 6	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



ORIGINAL DATE		2608 TEMPLE HEIGHTS DR.	
DRAWN BY		OCEANSIDE, CA. 92056-3512 (760)724-5300	
J. GARDNER		WIPER DEFLECTOR ASSY	
DRAWING APPROVAL		647.1600	
P. BRAVO		SCALE: NONE	
CONTRACT NO.		SHEET 4 OF 6	
UNLESS OTHERWISE SPECIFIED		REV. A	
DIMENSIONS ARE IN INCHES			
TOLERANCES ARE:			
3 PLACE DECIMALS ± .01			
ANGLES ± .5°			

1 2 3 4 5 6 7 8

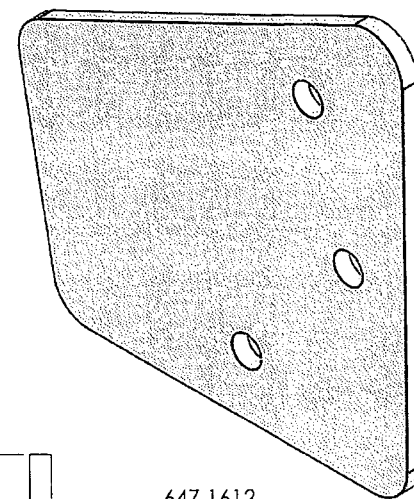
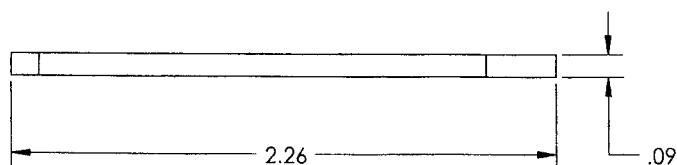
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

A

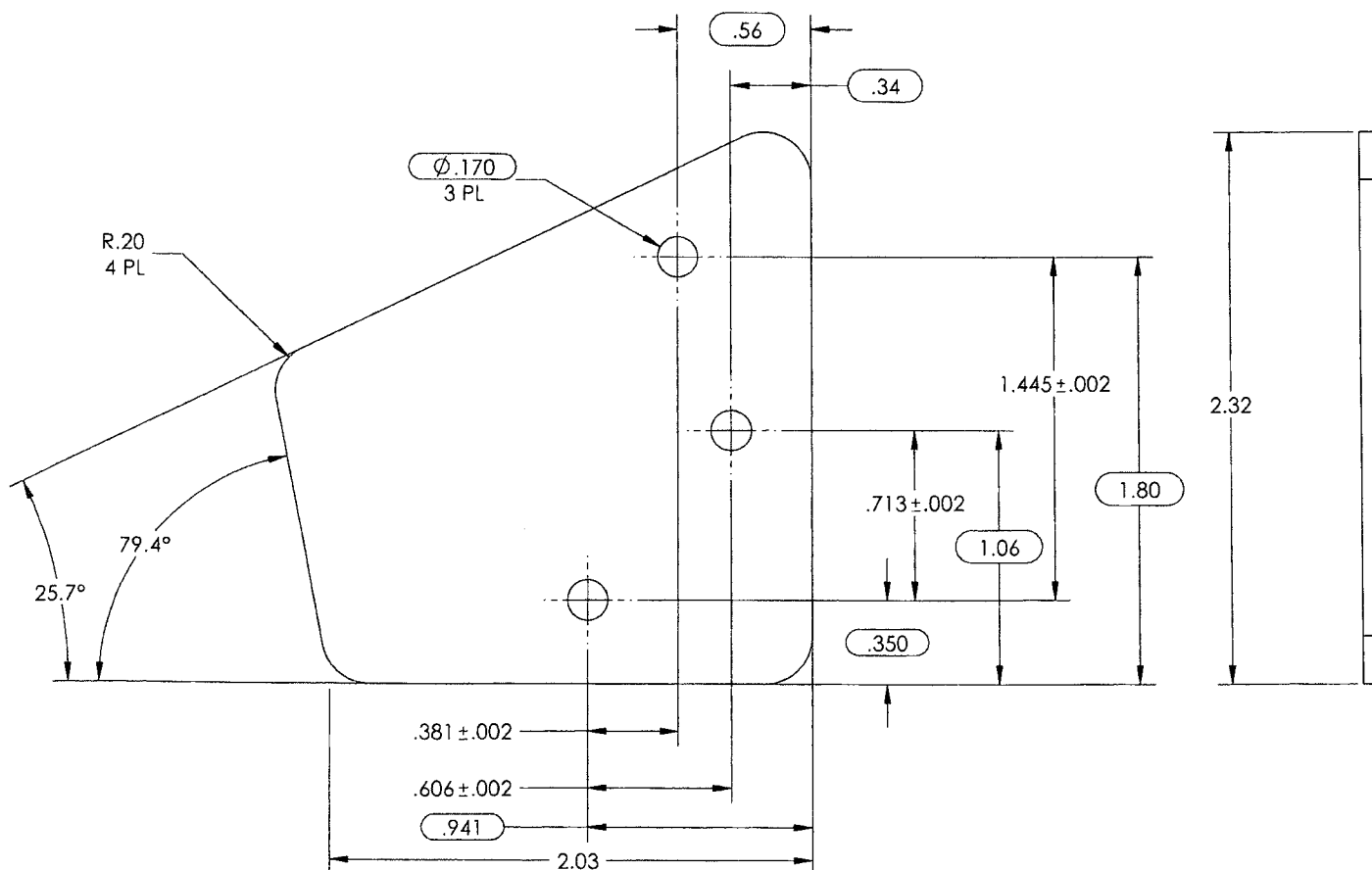
B

C

D

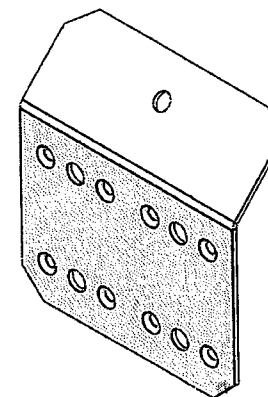
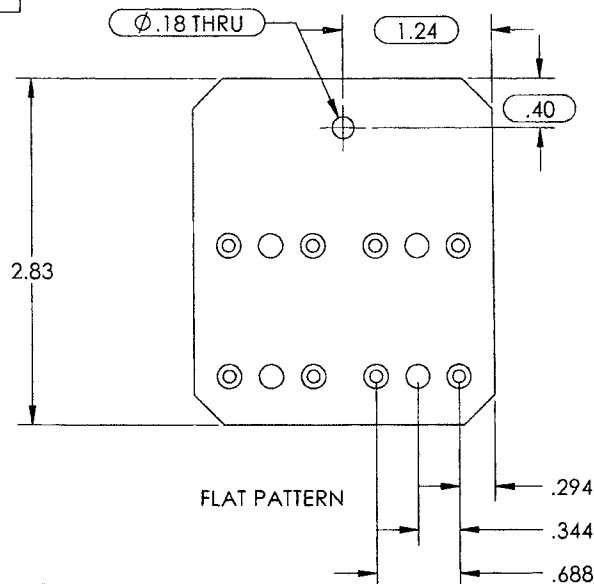


647.1612



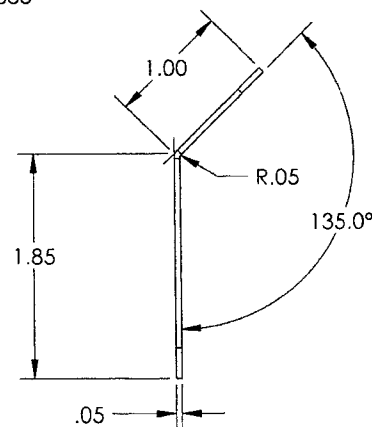
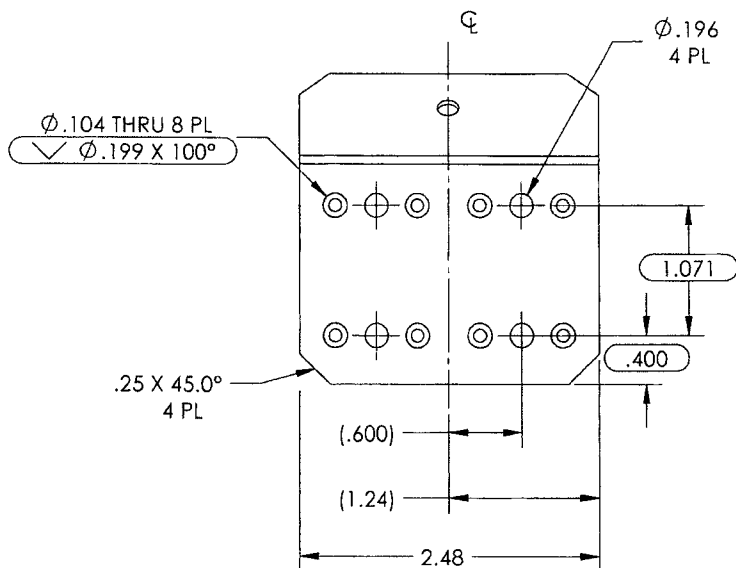
ORIGINAL DATE 11-02-91		28-10-99	
DRAWN BY J. GARDNER		CHECKER P. BRAVO	
DRAWING APPROVAL P. BRAVO		CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE 2 PLACE DECIMALS $\pm .01$ 3 PLACE DECIMALS $\pm .005$ ANGLES $\pm .5^\circ$		SCALE: NONE	
APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300		WIPER DEFLECTOR ASSY	
SHEET 8	CAGE CODE 07M26	DWG. NO. 647.1600	REV. A
SHEET 5 OF 6			

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



647.1613

FLAT PATTERN



ORIGINAL DATE (DD-MMM-YY) 06-10-09		APICAL INDUSTRIES	
DRAWN BY: J. GARDNER		2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL P. BRAVO		OCEANSIDE, CA. 92056-3512 (760) 724-5300	
CONTRACT NO.		WIPER DEFLECTOR ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		SIZE: B	REV: A
		CAGE CODE: 07M16	DWG. NO. 647.1600
		SCALE: NONE	SHEET 6 OF 6